



ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

**PROPOSAL FOR TERRESTRIAL AND SATELLITE
COMPONENTS OF IMT-2000**

Agenda item 1.6.1 - review of spectrum and regulatory issues for advanced mobile application in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

Executive summary

The following proposal identifies bands to be considered by administrations for use for IMT-2000 and other advanced communication applications. “Advanced communication applications” include wireless systems and devices that provide high quality voice, data and/or video uses. This concept recognizes that there will be uses of the identified spectrum that are developed in response to market demands and technological advances. The proposal includes a modification to RR S5.388 and associated modifications to the Table of Frequency Allocations. Furthermore, it includes two supporting resolutions.

This proposal contains the following key characteristics:

- 1) identifies the bands 698-960 MHz, 1 525-1 559 MHz, 1 610-1 660.5 MHz, 1 710-2 025 MHz, 2 110-2 200 MHz and 2 483.5-2 690 MHz that encompass the terrestrial and satellite components of IMT-2000 and other advanced communication applications;
- 2) emphasizes that administrations have the flexibility to make their decisions regarding implementation of these bands, or portions thereof, based on their requirements and current uses;
- 3) identifies bands that are inclusive of the major bands being considered around the world, thereby increasing the possibility of global harmonization and international consensus;
- 4) amends original footnote S5.388 to clearly identify and provide equal treatment of all bands for IMT-2000 and other advanced communication applications in a single reference;
- 5) encourages the evolution of current technology and the freedom of service providers to select technology given market demands;

- 6) modifies S5.388 to emphasize that this footnote does not affect the regulatory priority of allocated services;
- 7) recognizes the need of many administrations to continue to study these bands for possible use for IMT-2000 and other advanced communication applications, to expeditiously complete these national studies, and to report the results of those studies and national decisions to ITU-R;
- 8) invites ITU-R to perform key studies and maintain a database of national studies and decisions on selection of spectrum for IMT-2000 and other advanced communication systems.

Background

The United States supports the development and implementation of IMT-2000 and other advanced communication applications and technologies. These applications will serve as critical components of the communications and information infrastructure of the future.

Over the past decade, the use of cellular-type personal mobile communications services has grown tremendously worldwide. Studies in ITU and elsewhere indicate that this growth in personal communications will likely continue and additional spectrum will be needed to accommodate this growth. Moreover, many administrations that initially introduced analogue-based services in certain bands are transitioning those services to digital technology. To facilitate the continued growth of IMT-2000 and other advanced communication applications, it is essential to provide a domestic regulatory framework that allows operators to transition easily from existing analogue and digital systems to IMT-2000 and other advanced communication applications.

The significant market demand for wireless and mobile access to new multimedia services and to the Internet further increases the need for additional spectrum for IMT-2000 and other advanced communication applications. By providing spectrum that can be used for a variety of wireless Internet applications, administrations have the opportunity to address many societal needs. This new spectrum can be used for providing Internet access to rural, sparsely populated or hard to reach areas, providing high data rate services to support tele-medicine and tele-education applications, in addition to providing a variety of new services and wireless devices for businesses and consumers.

Discussion

The United States proposes the identification of spectrum in several bands for consideration by administrations for the implementation of IMT-2000 and other advanced communication applications. Specifically, the proposed modified S5.388 and Resolution IMT (WRC-2000) identify the 698-960 MHz, 1 525-1 559 MHz, 1 610-1 660.5 MHz, 1 710-2 025 MHz, 2 110-2 200 MHz, 2 483.5-2 690 MHz bands for potential IMT-2000 use.¹

Furthermore, the United States believes that it is essential not to tie specific technologies to specific frequency bands. In keeping with its technology-neutral belief that existing mobile operators should be free to evolve to IMT-2000 and beyond as the market demands, the United States has proposed several bands for the terrestrial and satellite components of IMT-2000 that are already allocated for mobile and mobile-satellite services. IMT-2000 and other advanced communication applications

¹ Regarding the frequency bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz, identified for the satellite component of IMT-2000, there are associated WRC-2000 issues in agenda item 1.10 and Resolution 218 that need to be resolved regarding AMS(R)S. If the satellite component of IMT-2000 uses these bands, account must be taken of the priority of AMS(R)S communications over all other communications as described in RR S5.357A and S5.362A.

will naturally evolve from existing technologies in response to market demand, allowing current operators and new licensees in existing mobile and mobile-satellite bands to bring advanced services to consumers as rapidly as new technology allows. This approach has the advantage of not artificially tying the rollout of new technology and service to new spectrum as administrations assess their ability to use that spectrum for IMT-2000 and other advanced communication applications. Although ITU plays an invaluable role in facilitating IMT-2000 and other advanced communication applications, it will be administrations, technology developers, equipment manufacturers and service providers that will ultimately decide when to introduce IMT-2000 and other advanced communication applications based on market factors. The United States believes that support for this evolutionary approach in existing mobile bands will likely lead to a more expeditious implementation of IMT-2000 and other advanced communication applications in bands that overlap globally.

The United States realizes that it may not be possible for many administrations to make available the large amount of contiguous, globally-harmonized spectrum for use by IMT-2000 and other advanced communication applications. The difficulty arises from the need of many administrations to consider the investment of existing licensees, the impact on consumers and other users of existing services and the flexibility to authorize other systems based on national needs. Many administrations are currently studying the identified bands to determine their availability for IMT-2000 and other advanced communication applications, the availability of comparable replacement spectrum to which current and emerging uses might migrate, and the costs of relocation as compared to the benefits of global harmonization of spectrum for IMT-2000 and other advanced communication applications. The proposal acknowledges the importance of these national studies, and calls for the adoption of Resolution YYY (WRC-2000) - resolving that administrations expeditiously complete their studies and update ITU-R regarding their findings. The results of these national studies and information on national decisions on selection of spectrum for IMT-2000 and other advanced communication applications will be useful for administrations wishing to implement such systems. Resolution YYY (WRC-2000) also invites ITU-R to conduct studies that address issues related to the use of the identified bands for IMT-2000 and other advanced communication applications, including band sharing, global roaming, and interference issues.

Spectrum

In accordance with the above principles, the United States believes the following bands should be identified for potential use by IMT-2000 and other advanced communication applications. The bands are broken out by terrestrial and satellite components.

Terrestrial

The United States proposes the following bands for the terrestrial component of IMT-2000 and other advanced communication applications: 698-960 MHz, 1 710-1 885 MHz, 2 500-2 690 MHz.² In addition, the bands 1 885-2 025 MHz and 2 110-2 200 MHz, which are already included in RR S5.388, should continue to be listed for use by IMT-2000 and other advanced communication applications. However, to eliminate any ambiguity in RR S5.388, the United States is proposing a

² Existing United States licensees operating in the 824-849 MHz, 869-894 MHz, 1 850-1 910 MHz and 1 930-1 990 MHz bands have expressed an interest in providing terrestrial IMT-2000 and other advanced communications applications. In addition, the Federal Communications Commission has received specific proposals to permit advanced communications applications to operate terrestrially in the 746-764 MHz, 776-794 MHz and 2 110-2 150 MHz bands.

modification that clarifies that administrations may continue to use spectrum identified for IMT-2000 and other advanced communication applications for other uses.

Section 1.1.1.1 of the CPM Report notes that it is desirable to meet the projected IMT-2000 spectrum requirements by identifying a limited number of contiguous global bands in order to reduce the cost, size and complexity of IMT-2000 terminal and network equipment and deployment, and provide the economies of scale for the mass market.

Satellite

The United States recognizes that their inherent global coverage of satellites makes them a key element of worldwide IMT-2000 and other advanced communication applications. As WRC-2000 considers the use of allocations for IMT-2000 and other advanced communication applications, it should identify sufficient global and regional spectrum for the satellite component. The CPM Report notes that “[a]vailability of global spectrum is particularly important for the satellite component.” (Section 1.1.2.1.) Further, the CPM Report advises that “[c]onsideration should be given to identifying existing MSS allocations between 1 and 3 GHz for satellite IMT-2000 applications. It is foreseen that most of the MSS bands between 1 and 3 GHz could be used for IMT-2000 in the longer term.” (Section 1.1.2.1.)

The United States supports the CPM Report statements and proposes to identify the following existing MSS allocations in bands between 1 and 3 GHz for the satellite component of IMT-2000 and other advanced communication applications: 1 525-1 559/1 626.5-1 660.5 MHz, 1 610-1 626.5/2 483.5-2 500 MHz, 1 980-2 010/2 170-2 200 MHz, 2 500-2 520/2 670-2 690 MHz, and 2010-2 025/2 160-2 170 MHz (Region 2 only). This proposal identifies existing allocations that should satisfy the projected MSS requirements through 2010, and avoids the extremely difficult task of allocating new worldwide spectrum for new technologies.

ARTICLE S5

Frequency allocations

MOD USA/12/186

470-890 MHz

Allocation to services		
Region 1	Region 2	Region 3
470-790 BROADCASTING S5.149 S5.291A S5.294 S5.296 S5.300 S5.302 S5.304 S5.306 S5.311 S5.312	470-512 BROADCASTING Fixed Mobile S5.292 S5.293	470-585 FIXED MOBILE BROADCASTING S5.291 S5.298
	512-608 BROADCASTING S5.297	585-610 FIXED MOBILE BROADCASTING RADIONAVIGATION S5.149 S5.305 S5.306 S5.307
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	610-890 FIXED MOBILE BROADCASTING
	614-806 BROADCASTING Fixed Mobile S5.293 S5.309 S5.311 <u>MOD S5.388</u>	
790-862 FIXED BROADCASTING S5.312 S5.314 S5.315 S5.316 S5.319 S5.321 <u>MOD S5.388</u>	806-890 FIXED MOBILE BROADCASTING	
862-890 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.319 S5.323 <u>MOD S5.388</u>	S5.317 S5.318 <u>MOD S5.388</u>	S5.149 S5.305 S5.306 S5.307 S5.311 S5.320 <u>MOD S5.388</u>

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

Allocation to services			
Region 1	Region 2	Region 3	
890-942 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 Radiolocation	890-902 FIXED MOBILE except aeronautical mobile Radiolocation S5.318 S5.325 MOD S5.388	890-942 FIXED MOBILE BROADCASTING Radiolocation	
	902-928 FIXED Amateur Mobile except aeronautical mobile Radiolocation S5.150 MOD S5.325 S5.326 MOD S5.388		
	928-942 FIXED MOBILE except aeronautical mobile Radiolocation S5.323 MOD S5.388		S5.327 MOD S5.388
	942-960 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.323 MOD S5.388		942-960 FIXED MOBILE MOD S5.388

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

MOD USA/12/188

1 525-1 610 MHz

Allocation to services		
Region 1	Region 2	Region 3
1 525-1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile except aeronautical mobile S5.349 S5.341 S5.342 S5.350 S5.351 S5.352A S5.354 <u>MOD S5.388</u>	1 525-1 530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354 <u>MOD S5.388</u>	1 525-1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.349 S5.341 S5.351 S5.352A S5.354 <u>MOD S5.388</u>
1 530-1 535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile S5.341 S5.342 S5.351 S5.354 <u>MOD S5.388</u>	1 530-1 535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354 <u>MOD S5.388</u>	
1 535-1 559	MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 S5.353A S5.354 S5.355 S5.356 S5.357 S5.357A S5.359 S5.362A <u>MOD S5.388</u>	

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

MOD USA/12/189

1 610-1 660 MHz

Allocation to services		
Region 1	Region 2	Region 3
1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>	1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>	1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>
1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION S5.149 S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>	1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) S5.149 S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>	1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) S5.149 S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>
1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) S5.341 S5.355 S5.359 S5.363 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372 <u>MOD S5.388</u>	1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.370 S5.372 <u>MOD S5.388</u>	1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.372 <u>MOD S5.388</u>
1 626.5-1 660 MOBILE-SATELLITE (Earth-to-space) S5.341 S5.351 S5.353A S5.354 S5.355 S5.357A S5.359 S5.362A S5.374 S5.375 S5.376 <u>MOD S5.388</u>		

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

MOD USA/12/190

1 710-2 170 MHz

Allocation to services		
Region 1	Region 2	Region 3
1 710-1 930	FIXED MOBILE S5.380 S5.149 S5.341 S5.385 S5.386 S5.387 S5.388 <u>MOD S5.388</u>	
1 930-1 970 FIXED MOBILE <u>MOD S5.388</u>	1 930-1 970 FIXED MOBILE Mobile-satellite (Earth-to-space) <u>MOD S5.388</u>	1 930-1 970 FIXED MOBILE <u>MOD S5.388</u>
1 970-1 980	FIXED MOBILE <u>MOD S5.388</u>	
1 980-2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) <u>MOD S5.388 S5.389A S5.389B S5.389F</u>	
2 010-2 025 FIXED MOBILE <u>MOD S5.388</u>	2 010-2 025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) <u>MOD S5.388 S5.389C S5.389D S5.389E S5.390</u>	2 010-2 025 FIXED MOBILE <u>MOD S5.388</u>
2 025-2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) S5.392	
2 110-2 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) <u>MOD S5.388</u>	
2 120-2 160 FIXED MOBILE <u>MOD S5.388</u>	2 120-2 160 FIXED MOBILE Mobile-satellite (space-to-Earth) <u>MOD S5.388</u>	2 120-2 160 FIXED MOBILE <u>MOD S5.388</u>
2 160-2 170 FIXED MOBILE <u>MOD S5.388 S5.392A</u>	2 160-2 170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>MOD S5.388 S5.389C S5.389D S5.389E S5.390</u>	2 160-2 170 FIXED MOBILE <u>MOD S5.388</u>

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

MOD USA/12/191

S5.388 The bands 698-960 MHz, 1 525-1 559 MHz, 1 610-1 660.5 MHz, 1 710-1 885-2 025 MHz, and 2 110-2 200 MHz and 2 483.5-2 690 MHz, or portions thereof that are allocated to the mobile and mobile-satellite services, are intended identified for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) and other advanced communication applications, (see Resolution **IMT (WRC-2000)**)). Such use is based on the equality of rights between all allocated radio services and does not preclude the use establish priority of assignments in these bands by among stations of the primary other services to which they are allocated. In accordance with Resolution **YYY (WRC-2000)**, studies regarding the possible use of the 698-960 MHz, 1 710-1 885 MHz and 2 500-2 690 MHz bands for IMT-2000 and other advanced communication applications are being conducted in many countries and in ITU-R, the results of which may impact the availability of those bands in those countries. The bands should be made available for IMT-2000 in accordance with Resolution **212 (Rev.WRC-97)**.

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment.

MOD USA/12/192

2 170-2 520 MHz

Allocation to services		
Region 1	Region 2	Region 3
2 170-2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>MOD S5.388 S5.389A S5.389F S5.392A</u>	
2 200-2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) S5.392	
2 290-2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2 300-2 450 FIXED MOBILE Amateur Radiolocation S5.150 S5.282 S5.395	2 300-2 450 FIXED MOBILE RADIOLOCATION Amateur S5.150 S5.282 S5.393 S5.394 S5.396	

2 450-2 483.5 FIXED MOBILE Radiolocation S5.150 S5.397	2 450-2 483.5 FIXED MOBILE RADIOLOCATION S5.150 S5.394	
2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) Radiolocation S5.150 S5.371 S5.397 S5.398 S5.399 S5.400 S5.402 <u>MOD S5.388</u>	2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) S5.398 S5.150 S5.402 <u>MOD S5.388</u>	2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION Radiodetermination-satellite (space-to-Earth) S5.398 S5.150 S5.400 S5.402 <u>MOD S5.388</u>
2 500-2 520 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.405 S5.407 S5.408 S5.412 S5.414 <u>MOD S5.388</u>	2 500-2 520 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.404 S5.407 S5.414 S5.415A <u>MOD S5.388</u>	

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

MOD USA/12/193

2 520-2 700 MHz

Allocation to services		
Region 1	Region 2	Region 3
2 520-2 655 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403 S5.405 S5.408 S5.412 S5.417 S5.418 <u>MOD S5.388</u>	2 520-2 655 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403 <u>MOD S5.388</u>	2 520-2 535 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.403 S5.415A
		2 535-2 655 FIXED S5.409 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.418 <u>MOD S5.388</u>
2 655-2 670 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.412 S5.417 S5.420 <u>MOD S5.388</u>	2 655-2 670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420 <u>MOD S5.388</u>	2 655-2 670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420 <u>MOD S5.388</u>
2 670-2 690 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 <u>MOD S5.388</u>	2 670-2 690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 <u>MOD S5.388</u>	2 670-2 690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 S5.420A <u>MOD S5.388</u>

Reasons: To identify spectrum for IMT-2000 and other advanced communication applications to facilitate consistent deployment. To provide clear guidance on the use of the frequency bands identified for IMT-2000 and other advanced communication applications.

SUP USA/12/194

RESOLUTION 212 (Rev.WRC-97)

**Implementation of International Mobile
Telecommunications-2000 (IMT-2000)***

Reasons: Consequential to USA/12/191.

ADD USA/12/195

RESOLUTION IMT (WRC-2000)

Global advanced communication applications including International Mobile Telecommunications-2000 (IMT-2000)

The World Radiocommunication Conference (Istanbul, 2000),

considering

- a) that IMT-2000 is the ITU vision of global mobile access and is scheduled to start service around the year 2000;
- b) that IMT-2000 is an advanced communication applications concept intended to provide telecommunications services on a worldwide scale regardless of location, network or terminal used;
- c) that inevitable changes in technology will lead to other advanced communication applications beyond IMT-2000;
- d) that through integration of terrestrial mobile and mobile-satellite systems, different types of wireless access will be provided globally, including services available through the fixed telecommunication networks and those specific to mobile users;
- e) that global roaming and the economies of scale of a global market are desirable and can be best achieved through the availability of worldwide spectrum for IMT-2000 and other advanced communication applications, in particular for the satellite component, because of their global/international nature and their diverse technical characteristics;
- f) that when such alignment is not possible, multi-band phones and other new technologies may assist in achieving global roaming;
- g) that technological advancement and market demand encourage the use of flexible regulatory approaches that will promote innovation and accelerate the delivery of advanced communication applications to consumers;
- h) that ITU Recommendations accommodate the transition from earlier technologies to future technologies;
- i) that for technical reasons, such as propagation factors and equipment design, the ITU-R has determined that consideration of additional spectrum requirements for the mobile users of IMT-2000 be focused on the frequency range below 3 GHz, however, the existing applications below 3 GHz were implemented in their current bands for similar technical reasons;
- j) that ITU-R Report M.[IMT.SPEC] Spectrum Requirements for IMT-2000, forecasts a need for additional spectrum on a global basis for the terrestrial and satellite components in the year 2010;
- k) that the radio specifications for IMT-2000, as well as their various technical characteristics, as presented in ITU-R Recommendations, support the evolution of first- and second-generation mobile systems to IMT-2000;
- l) that there have been high levels of investment in existing systems that may not evolve to or be able to share with IMT-2000 systems. These systems may continue to operate in the bands or portions of the bands identified for IMT-2000 and other advanced communication applications,

thereby reducing the amount of global spectrum potentially available to support those new applications;

m) that No. **S5.388** identifies bands for use by IMT 2000 systems,

noting

a) that administrations may implement IMT-2000 in any frequency band allocated to the mobile or mobile-satellite service;

b) that the identification of spectrum for IMT-2000 does not convey any status under the Radio Regulations of ITU but does provide uniform guidance to administrations, operators and manufacturers in terms of deploying IMT-2000 and other advanced communication applications;

c) that the implementation of the terrestrial component of IMT-2000 and other advanced communication applications, within the bands identified, is expected to commence in some bands as early as the year 2000, subject to market and technical considerations;

d) that the implementation of the satellite component of IMT-2000 and other advanced communication applications, in the bands identified and allocated to the MSS, could commence in some bands as early as the year 2000, subject to market and technical considerations;

e) that administrations who use all or parts of the frequency bands identified for IMT-2000 for first- and second-generation mobile systems may ultimately want to deploy IMT-2000 and other advanced communication applications in these bands;

f) that administrations who use the frequency bands identified for IMT-2000 for applications other than mobile systems as specified in *noting e)* may want to give the operators of these systems the flexibility to either continue to provide the current services or to evolve their systems to the provision of other terrestrial services such as IMT-2000;

g) that some administrations will be conducting studies prior to making decisions on their implementation of certain bands;

h) that, in accordance with Resolution **YYY (WRC-2000)**, studies will be conducted in many countries and in ITU-R regarding the possible implementation of IMT-2000 and other advanced communication applications in portions of the identified bands,

invites administrations

1 to adopt regulatory and spectrum decisions that protect the existing investment in mobile telecommunication systems and facilitate the ability for existing operators to evolve their systems towards IMT-2000 and beyond based on marketplace needs;

2 to adopt regulatory and spectrum decisions that ensure operators have the flexibility to provide the services and use the diverse technologies that best meet marketplace needs;

3 to give due consideration to protecting the investment in other existing radio services and to lessening the impact on existing users;

4 to adopt appropriate and reasonable mechanisms to address the cost of relocation and to ensure provision of comparable replacement spectrum in those cases where relocation is deemed necessary,

urges

that, administrations deploying IMT-2000 systems should use the relevant international technical characteristics, as identified by ITU-R and ITU-T Recommendations,

resolves

1 that administrations planning to implement terrestrial IMT-2000 and other advanced communication applications, consider the use of the bands or portions thereof: 698-960 MHz, 1 710-2 025 MHz, 2 110-2 200 MHz and 2 500-2 690 MHz (noting that the bands 2 500-2 520 MHz and 2 670-2 690 MHz are also identified for the satellite component);

2 that administrations planning to implement satellite IMT-2000 and other advanced communication applications, consider the use of the bands or portions thereof: 1 525-1 559/1 626.5-1 660.5 MHz, 1 610-1 626.5/2 483.5-2 500 MHz, 1 980-2 010/2 170-2 200 MHz, 2 500-2 520/2 670-2 690 MHz, and where appropriate within regional mobile satellite allocations consider the use of the bands or portion thereof: 2 520-2 535/2 655-2 670 MHz and 2 010-2 025/2 160-2 170 MHz (noting that the bands 2 500-2 690 MHz are also identified for the terrestrial component)¹.

Reasons: To support a flexible international allocation approach that preserves the prerogatives of administrations to implement IMT-2000 systems as appropriate. This proposal supports the evolution of existing cellular and PCS systems to IMT-2000, while at the same time identifying new spectrum for advanced communication applications.

¹ The 2 500-2 520 MHz and 2 670-2 690 MHz bands are also identified for use by the IMT-2000 terrestrial component. When considering such use prior to 1 January 2005 (see Nos. **S5.414** and **S5.419**), administrations should recognize that this may limit the use of these MSS allocations by the satellite component of IMT-2000.

ADD USA/12/196

RESOLUTION YYY (WRC-2000)

Issues for further study regarding the implementation of advanced communication applications such as International Mobile Telecommunications-2000 (IMT-2000) in the frequency bands identified in No. S5.388

The World Radiocommunication Conference (Istanbul, 2000),

considering

- a) that WRC-2000 has updated the identification of frequency bands available for IMT-2000 and other advanced communication applications, as stated in the modification to No. **S5.388** and the new Resolution **IMT (WRC-2000)**;
- b) that all or portions of the bands identified for IMT-2000 are currently used by second-generation mobile communication systems, systems of other radio services, or mobile-satellite systems;
- c) that Recommendation ITU-R M.1036 is concerned with implementation considerations with respect to spectrum for IMT-2000 in the bands 1 885-2 025 MHz and 2 110-2 200 MHz;
- d) that Recommendation ITU-R M.1308 is concerned with the evolution of existing mobile communication systems to IMT-2000;
- e) that administrations may have differing additional IMT-2000 spectrum requirements and may wish to implement IMT-2000 in certain frequency bands and not others, or may wish to implement IMT-2000 at different times,

considering further

- f) that IMT-2000 is an advanced communications concept intended to provide telecommunications services on a worldwide scale regardless of location, network or terminal used;
- g) that various technical approaches may be available in the future to provide for global roaming across mobile radio systems that operate in different frequency bands;
- h) that inevitable changes in technology will lead to other advanced communication applications beyond IMT-2000,

noting

- a) that all or parts of the 1 850-1 910/1 930-1 990 MHz band are used by several Region 2 administrations for second-generation mobile communication systems and that the operators of these systems may wish to have these systems evolve to IMT-2000;
- b) that all or parts of the 1 710-1 785/1 805-1 885 MHz are used by many Region 1 and 3 administrations for second-generation mobile communication systems and that the operators of such systems may want to use these bands for IMT-2000;

c) that administrations who use the 2 500-2 690 MHz band for fixed systems may want to give the operators of these systems the flexibility to either continue to provide fixed services or to evolve to the provision of IMT-2000 and other advanced communication applications;

d) that, due to the level of investment in current uses and difficulties in identifying spectrum alternatives, administrations will continue to study the 698-960 MHz, 1 710-1 885 MHz and 2 500-2 690 MHz bands or portions of those bands for IMT-2000 and other advanced communication applications in their countries,

resolves

that administrations expeditiously complete their national studies and update ITU-R regarding the results of their studies and their selection of spectrum for IMT-2000 and other advanced communication systems,

invites ITU-R

1 to study how first- and second-generation mobile communication system band plans can be used to accommodate evolution of first- and second-generation mobile communication systems to IMT-2000 and other advanced communication systems;

2 to study means to facilitate global roaming across different regional band plans within the bands identified for IMT-2000 and other advanced communication systems;

3 to study the sharing issues related to the deployment of IMT-2000 systems in portions of the bands identified for IMT-2000 and other advanced communication systems;

4 to maintain a database of national studies and decisions on selection of spectrum for IMT-2000 and other advanced communication systems.

Reasons: To recognize the need of many administrations to continue to study these bands for possible use for IMT-2000 and other advanced communication applications and provides a mechanism to report the results of those studies and national decisions to ITU-R.
